

NASA Astrobiology Program Early Career Resources: Past, Present, Future

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Introduction: Over the past 20 years the Astrobiology Program has assembled and evolved a large suite of programs and opportunities to encourage and support early career astrobiologists. From K-12 educational resources, through funding opportunities for undergraduate and graduate students, to programs for postdoctoral fellows and other early career researchers, the Astrobiology Program seeks to develop the next generation of astrobiology leaders.

Education and Communication: NASA's Astrobiology Program identified the need to train the next generation of astrobiologists as one of the NASA Astrobiology Institute's main five goals. A robust [education and communication](#) program was developed and resources curriculum were developed for K- 12 learners and the general public, resulting in incorporation of astrobiology topics into science education and a tremendous interest in the subject by both students and other learners.

Conferences and Workshops: Since 2004, sixteen [Astrobiology Graduate Conferences](#) (AbGradCon), and twelve Proposal Writing Retreats (PWR), have been supported and encouraged by the Astrobiology Program. These unique gatherings were organized solely by and for graduate students and postdocs within 2 years of their doctorate, providing opportunities for participants to share oral and poster presentations, and to develop and review research proposals as part of an interdisciplinary team. These opportunities provide a venue to broaden the participants exposure to the many fields within astrobiology, to form networks, both within the US and internationally as three of the AbGradCons have been hosted outside of the US, and to gain organizational skills. Attendance at the Astrobiology Science Conference (AbSciCon) is encouraged through Student Travel awards and the Student Poster Competition

Summer/Winter Schools: In the past 20 years a number of Summer and Winter Schools and programs in astrobiology were created or supported by

the Astrobiology Program, in particular the [Josep Comas I Sola International Summer School in Astrobiology](#), organized in conjunction with the Centro de Astrobiologia in Santander, Spain. Twenty early career astrobiologists from US institutions matched with twenty from European institutions spend a week focused on in a combination of classroom lectures and field trips.

Other Programs: The Astrobiology Program participates in the [NASA Postdoctoral Program](#), providing two year postdoctoral fellowships for PHD scientists and engineers to conduct research with Astrobiology Program funded investigators. There have been 134 Astrobiology NPP Fellows to date, many of whom are now NASA employees, faculty involved in teaching and researching astrobiology, working for international space partners or in industry. Feedback from the NPP alumni indicate that employers sought out Astrobiology Program NPPs for the breadth of their knowledge and experience in designing and conducting their own research project.

To enable independent field research the Astrobiology Program partners with the American Philosophical Society (APS) to provide funding for the [Lewis and Clark Fund for Exploration and Field Research in Astrobiology](#), which is modeled after an existing APS program, to provide support for graduate students, postdocs, and early-career scientists to collect samples and data in the field. Similarly, the [Early Career Collaboration Awards](#) provide travel funding for early career researchers to form collaborations with astrobiologists in the US or internationally. The Research Coordination Networks have early career networks that have provided professional development workshops, virtual networking and training opportunities.

Summary: The Astrobiology Program has developed a broad portfolio of opportunities to attract and retain early career researchers into astrobiology, to encourage them to identify as astrobiologists, to strengthen their connections to their peers and to pursue a career in astrobiology.